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Volume XLVII

MARCH, 1925

Number Three

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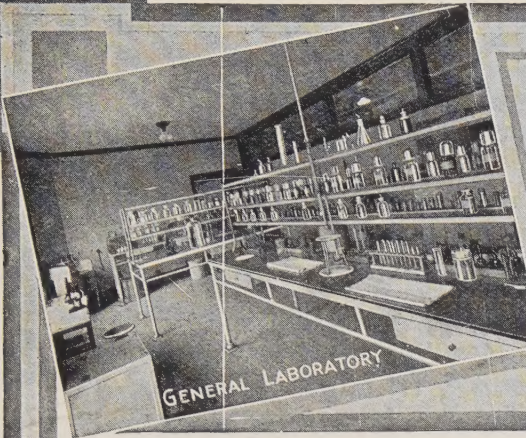
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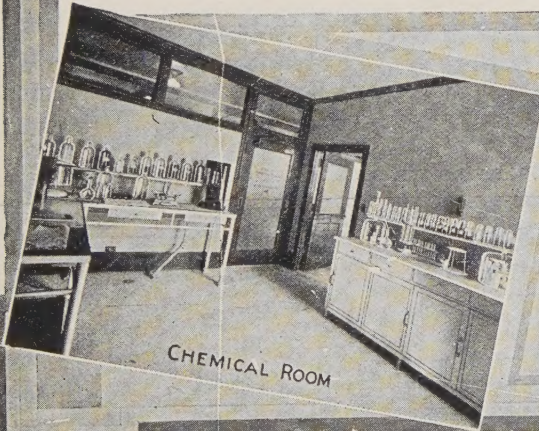
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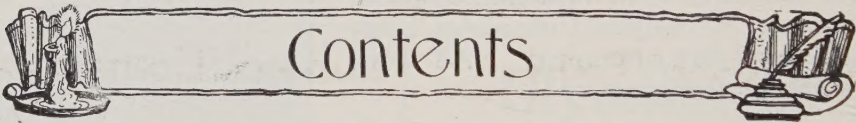


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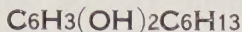
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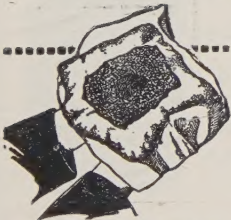
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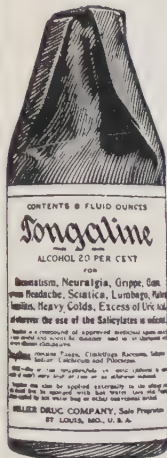
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Vol. XLVII

MARCH, 1925

No. 3

Original Articles

POST TRAUMATIC MENTAL DISORDER

CHARLES F. READ, M. D., State Psychopathic Institute, Chicago, Ill.

In dealing with the mental complications of physical injury several related problems are involved:

(a) Those of mental states directly due to trauma of the head which has produced brain pathology.

(b) Abnormal mental states seemingly precipitated by head trauma but probably without definite traumatic pathology, the result of mental rather than physical shock and of endogenous rather than exogenous origin such as dementia praecox, manic-depressive, etc.

(c) Mental states apparently precipitated by trauma of the head but based upon already existing pathology such as general paralysis of the insane, arteriosclerosis, senile change, etc.

(d) And finally, disorders apparently closely associated with trauma of other parts of the body than the head.

The following classification offered by Adolph Meyer* some years ago is still a good one:

1. Direct post traumatic delirium
 - a. Reaction with infection
 - b. After operations and injuries
 - c. Of slow resolution from coma
 - d. Protected with confabulations
2. Post traumatic constitution
 - a. With increased reaction to alcoholic infections, disease, etc.
 - b. Vaso-motor neuroses
 - c. Explosive diathesis
 - d. Hysteroid or epileptoid
 - e. Paranoid reactions

*American Journal of Insanity, Vol. 60, p. 351.

3. Post traumatic mental defects
 - a. With aphasia
 - b. Secondary deterioration in connection with epilepsy
 - c. Terminal deterioration

4. Where trauma is a mere contributing or precipitating factor.

5. Where injury does not affect the head, there is no noteworthy infection and the mental disorder is endogenous.

There is little need of dwelling upon the febrile reactions, due to infections. Individuals vary in mental as well as physical reaction to wound infection. Everything depends upon the stability of the patient's nervous system, upon his heredity and habits. Everyone has a breaking point, the only difference being that some break under less strain than others.

Likewise concerning the delirium following operations or injuries without infection, there is little to say. Here again we have to deal with the personal equation plus the effects of hemorrhage, anaesthesia and disturbances of circulation, either local or general. These deliria, generally of short duration, may be disastrous in their results if the patient is not guarded against self injury. The physician or surgeon must keep in mind the fact that the so-called normal under physical strain individual may break mentally when this is least expected.

The mental phenomena immediately following gross injury to the skull may be summed up in the term *unconsciousness*. The further course of the mental disturbances in these cases depends upon the amount of hemorrhage and laceration of brain tissue and upon the extent of the secondary infection which is almost inevitable where the dura is penetrated. The extent of the bony defect is not of great importance so far as life is concerned; in fact, the resultant decompression may be of decided advantage in certain cases. Cortical tissue itself may be lost in considerable quantities without producing mental disorder. Neurologically speaking, the frontal lobes are silent areas but epilepsy or the traumatic constitution especially the former may follow injury in this region when it results in bony defect with adhesions. Berger* believes that injury of the left hemisphere is more apt to present mental symptoms, especially that of the frontal lobes and Meyer feels that wounds of the vertex are prone to produce bad results. Forster** refers to Allers as connecting muscle rigidities and loss of initiative with frontal lesions. Basal fractures are prone to cause long drawn out delirious episodes. Forster also agrees with Kocher, Breslaner and Reichardt that unconsciousness is associated with injury of the medulla.

It is penetration of the dura with consequent infection that so often spells disaster by way of meningitis and brain abscess. The hospital mortality of penetrating wounds in the British army service in the late war

*Trauma and Psychosis, 1915.

**Monatschrift f. Psych. u. Neur., Berlin, Aug., 1919.

according to G. Jefferson*** was 37.6% due always, he states, to infection. *Often this infection is surprisingly slow in producing symptoms*, a fact to be seriously considered when dismissing a head case from observation. The mental picture is usually that of a rapidly developing somnolence, with possibly some delirium, progressing to stupor. The physical signs are those of pressure among which the disk findings are most important. Spinal puncture is diagnostically important. Upon the other hand, serous meningitis at times gives a papillary oedema and increased fluid pressure up to 480 mm of water even in cases of from six months to a year's standing (M. Berger). Here spinal or cistern puncture may relieve pressure and promote recovery.

The ordinary case of head injury is most apt to be a concussion with or without depressed fracture or with no demonstrable fracture at all. These are the cases, though the percentage is small, that furnish us with the majority of the frankly traumatic insanities. The following case (seen through the courtesy of the State Psychopathic Hospital, Ann Arbor, Mich), exemplifies the type quite well:

Richard DeF., admitted Jan. 25, 1922, age 29, married, no history save that he was said to have been injured over the left frontal region January 9th in an automobile accident; was taken to the University Hospital and transferred from there without operation.

Patient, when seen in bed January 28, 1922, was a well nourished man with some scattering boils over the trunk. There was a ptosis of left eye, probably due to scar of injury. Pupils were equal and somewhat sluggish in reaction. He was rather unsteady upon his feet and presented a well marked Gordon-Oppenheim on left side, no Babinski, interesting in view of the fact that his direct injury was upon the left side of head thus raising the question of counter coup. He lay quietly in bed without attempting to get up and was untidy in habits; responded to questions but showed little spontaneity. No speech defect. Impressibility proved to be almost nil, did not remember name, date or place after a few minutes. Apparently knew the name of his wife and children and his own age but very little more could be obtained from him.

To illustrate his unclearness, as he lay in bed he suddenly asked about a "picture" on the wall in an adjoining room, then said it had been looking like a brown jug to him for the last four days. The object was a clock about 30 feet away. The examiner gave patient his name and occupation many times but he could not remember it and persisted in calling him "Gauze" and thought he might be a minister. He saw a patient leaving his bed to go to an adjoining room and remarked there were lot of men working in Michigan. He remembered nothing about his accident and evidently worried about nothing; did not even know he had been hurt. His mood at times was facetious.

He watched the adjoining room where there are several beds and

***Brit. Journal, Surgery, Vol. VII.

other patients but did not seem to comprehend the nature of what was going on there, remembering "If I saw that young doctor now I would have him mix me up a drink." He is very possibly an alcoholic to judge from occasional references to drinking.

His attempts, under stimulation, to read a paper were interesting. He seemed to see and yet not to grasp the meaning of words, would read one or two in a headline and then stop and seem not to comprehend the meaning. He read the figures 1,113,750 first as 1,113,550, then 1,113,150, then 11,000, then 113,750. When asked about the picture of a man said he was not acquainted with him and made no effort to read the name below. Later on he could not be persuaded to read more than a word at a time. To dictation he spelled house, cat, etc. He readily accepted suggestions concerning the nature of his activities in the hospital but did not confabulate spontaneously.

All in all the syndrome would seem to be one of post traumatic clouding of consciousness with something approaching a Korsakoff syndrome, the latter possibly conditioned in part at least by chronic alcoholism, upon the extent of which the prognosis would be somewhat dependent. This patient in the course of a few weeks recovered sufficiently to go home.

The following interesting case illustrates very well the later course of a similar case though too little is known about the more acute stage:

Wm. S.—Admitted June 3, 1920, 49 years of age, white, laborer, married. Family history negative. Moderate user of alcohol in the past.

April 1, 1920, he was struck upon the head by the open door of a passing truck and was unconscious at the Cook County Hospital for six (?) days with skull fracture. Two weeks later right eye became inflamed and later mastoiditis developed. Remained in hospital seven weeks and became expansive—thought himself an officer, doctor, etc., had much money, government was after him, etc. Physical examination when admitted showed patient to be poorly nourished, right eye enucleated "on account of inflammation," scar of mastoid operation. Pupils were negative—suggestion of right facial paralysis. He had been at home for two weeks before commitment. Mastoid operation at eye and ear infirmary shortly before admission. Was not irritable nor forgetful.

When examined June 17th he told a long story about an air plane trip which he had taken several weeks before he was hurt. The manner of telling suggested confabulation. "A gentleman named L came to me on Wabash Ave., took me down to Grant Park two or three weeks before I was hurt about four months ago. (Patient was injured about two months before his admission.) I had known this man for five years. I had met him there on the street and we talked about how we were getting along and the times in general. He asked me where I was working. He finally asked me if I had nerve enough to go up in the machine with him. He placed me in the machine and placed the two safety belts around me and away we went. We went over the Field Museum and out over the lake

and he leaped up pretty well and then came back down again. When we landed he said he had to catch a train to go away. I walked as far as Randolph and Michigan with him and bid him goodbye. I then caught the Indiana car to go home and that is the last time I saw him."

He answered questions freely. Memory seemed to be good. Did not recall how he was hurt but remembered apparently up to the moment it occurred. Said he came to about a week later. Was in the County Hospital 7 weeks and 4 days—approximately correct—though he probably fused this experience to some extent with that in the eye and ear infirmary. He felt all right at this time—*no headaches, dizziness*. His stories, when repeated from time to time, remained practically the same. At staff meeting he was quiet and orderly, claimed that a friend was going to buy a farm near the city so that he might work on it. This farm would be about 250 acres. His friend was a special policeman in a bank. There was an entire failure to connect the sum involved in such a purchase with the friend's ability to pay.

It was remarked that the patient seemed to feel very well and was anxious at times to tell how good he felt. He seemed not to realize that the sight of his right eye had been destroyed, certainly was not at all depressed by the fact. His wife was not anxious to remove him and a friend who came to visit him seemed to think that he was not quite himself.

The remainder of the history is brief. The patient was paroled to his wife about a month later and returned after two months (Sept. 20, 1920), in poor condition with a black eye which he stated was caused by being struck by a negro. He died three weeks later, Oct. 13, 1920, quite suddenly following a convulsion. A complete physical examination was not made at the time of his readmission, which is most unfortunate. Spinal fluid was negative. The findings of the coroner's physician was "brownish degenerated areas on surface of temporal and frontal lobes of brain showing old hemorrhage and pus over the right parietal region, in the fourth ventricle, lateral ventricle and over the base."

This patient undoubtedly had a delirious upset following his head injury and became clear without correcting his dream experience of the airplane, the farm, etc., thus indicating decidedly weakened judgment, illustrated very well too by his persistence in the idea of the 250 acre farm near Chicago to be given him by his policeman friend. When told this land would cost from \$600 to \$800 an acre he made no comment, seeming not at all to recognize the absurdity of the situation. Of particular interest is the fact that he did not complain of the head symptoms so common in these cases, especially in view of the post-mortem findings and the negative spinal fluid. The case also illustrates extremely well the latency of symptoms during the development of extensive pathology.

There is nothing pathognomonic in the symptomatology of many of these patients. Everything depends upon the history of injury or direct

evidence of it and even then we can be deceived inasmuch as the head may present evidences of a trauma sustained subsequent to the development of the psychosis. However, in any large group of bona fide traumatic case histories the following items will stand out more or less prominently.

1. A history of head trauma.
2. A period of unconsciousness or semi-consciousness (though Berger found in 53 cases that 15% did not give such a history).
3. Followed by more or less delirium, confusion and irrelevant speech.
4. Amnesia and a tendency to fill in memory gaps with confabulations—Korsakoff's syndrome.
5. Periodic and rather sudden variations of mood. Recurrent confusion with fear reaction and violence.
6. Possibly epileptiform seizures.
7. Complaints of head sensations, such as headache, dizziness, foreign body.
8. Neuraesthetic fatigability and hypochondria.

Accompanying these mental symptoms, none of which are pathognomonic in themselves, there may be some difference in the size and reaction of the pupils, deafness, Rombergism, speech defect, altered reflexes, etc. Forster* and Berger both lay stress upon increased spinal fluid pressure. The benzedine test for occult blood may be positive long after the accident.** Such physical signs naturally assist greatly in establishing a diagnosis especially in the presence of definite evidence of old head injury or history to this effect.

After the above statement of signs and symptoms the following case of Abe L. is cited with some hesitation because the picture of a psychosis apparently proceeding directly out of a head injury so resembles dementia praecox as to have been thus diagnosed three times in two state hospitals in the face of the traumatic history. Hebephrenic dementia praecox, however, remits but rarely and usually with some very evident defect. This patient after a psychosis lasting four years is at work and seemingly well:

A. L.—Admitted to Elgin State Hospital Nov. 2, 1917, a Russian Jew, family history negative, age 29, married, automobile painter. July, 1916, while riding a bicycle was struck by an automobile, receiving an injury of the head. He was taken to a hospital where he recognized no one and remained there three weeks, *unconscious two weeks* (?). After that was not in normal mental health. He worked very little—"got things mixed up in his head" and "they could not keep him any place." Shortly before admission he thought he recognized other women as his wife and would try to follow women passing with baby carriages. He feared someone was going to kill him because he did so much work in the shop; was very talkative and walked about the house a great deal; never violent, memory good. Thought people were watching him.

*E. Forster, *Monatsschrift f. Psych. u. Neur.*, Berlin, Aug., 1919.

**G. B. Hassan, verbal communication.

At the time of the first state hospital examination physical examination was negative; in the mental examination he cooperated but was uninterested. Did not respond well to questions. No spontaneous stream. Said he would like to just sit in his room if the other patients would leave him alone. *He denied hallucinosis*. Orientation was questionable but thought the physician might be a doctor. General information was difficult to ascertain. Thought nothing was the matter with him, that he ought to go out and get a job, but seemed little interested in his wife or children. Diagnosis hebephrenic dementia praecox.

He was re-presented June 20, 1918, with a history of untidiness, destructiveness, impulsiveness, violence and resistiveness. Was constantly talking to himself, stupid and indifferent, lying in bed with his head covered and on account of the entire picture and slow progressing deterioration was again diagnosed as dementia praecox.

He was transferred to the Chicago State Hospital, August, 1918, where his condition was apparently unchanged. He improved remarkably during the year 1919 to 1920, became quiet and agreeable and took charge of a linen room. He gave a good account of himself when questioned and seemed to remember all the principle facts of his life history. The diagnosis of dementia praecox was, however, again confirmed.

He was removed from the hospital the latter part of 1919 but was returned shortly after because he could not get along; was said to be quite disconnected in his speech and restless. August, 1920, he escaped, returned by himself shortly afterward, was paroled and began to work though talk was somewhat rambling. After this he apparently got along well though he complained some of headache. Discharged in November, condition improved. Was doing well in some factory. The examining physician stated that his reactions seemed to be superficial and he showed some "mental slowing."

The case was investigated January 10, 1922, by social service worker who found the patient out and his wife in a hospital following delivery. He was said to be working and was well spoken of by the neighbors. Recovery is, at least socially, complete.

In general the course of this case was that of dementia praecox but the onset with unconsciousness following head injury, apparent absence of hallucinosis and a final symptomatic recovery are unusual features which perhaps justify the diagnosis of traumatic insanity; remembering, however, that dementia praecox itself may follow directly upon any kind of trauma—of which more later.

Next to the more or less acute traumatic psychoses the so-called traumatic constitution is most interesting. Here the mental changes are often subtle and most important for this very reason. The various types range by infinite gradations from an increased intolerance for alcohol, sun and infection, along with but slight change in personality, to the marked neuroses and paranoid developments. To this indefinite group belong those

individuals who perhaps deserve our greatest pity in that the change precipitated by their accident may evidence itself merely as an exaggeration of unpleasant traits, they have long possessed in the development of unusual, immoral behavior in a loss of ambition and ability to get along, in irritating hypochondria or in behavior that suggests malingering. And too, there must often arise a question as to the validity of assuming *post hoc propter hoc*. Perhaps the relationship of the accident and the change of personality is only coincidental after all, vide the following case:

Wm. C.—Age 15, was admitted to the Elgin State Hospital, Dec. 30, 1921. Mother stated patient was bright in school, passed his examinations without difficulty, conduct good, never stole. Was struck by an auto Dec. 13, 1920, and was unconscious for five weeks. When he regained consciousness "he could not remember." For the first two days and nights following injury he had one convulsion after the other and suffered greatly. Decompression operation was performed the day he was injured. Lost nearly a year's schooling on account of illness. School marks since accident said to be of passing grade. Began to steal after accident, took jewelry as well as money. This would happen sometimes two or three days a week then again not for several weeks. He would deny up and down that he had not taken it while he had the money in his pocket and finally would confess. When asked why he stole would remark "Oh just because I wanted to." His memory became defective and he masturbated badly. Some days he would talk continually. While he was in the hospital it required hypodermics to keep him quiet.

The examination at time of admission showed a bony defect in the left frontal parietal region about 2 by $2\frac{1}{2}$ cm. Pupils were equal but patient claimed vision is not so good as before accident. Test chart said to read 20-30R and 20-40L, findings which are somewhat doubtful though the disks were perhaps a trifle paler than normal. There was some tremor of the fingers, otherwise examination was negative. Patient is still restless and talkative but well behaved, tires readily and is egocentric.

History in this case is very meagre but the question arises as to whether accident brought to the surface a psychopathic tendency or was this merely coincidental. The boy is only 15 years old and psychopathy is very apt to first claim attention in adolescence.

The case of Charles B. is a complement to the above and illustrates very nicely the development of the explosive diathesis in a boy who had at one time been in a correctional school though possibly through no grave fault of his own since he had no one to look after him save his grandparents. By coincidence, the physician who examined him upon admission to the state hospital had known him as a well behaved boy in this school, a few years prior to the accident.

Charles B.—Admitted to Chicago State Hospital, Nov. 17, 1921, age 17, single, a laborer. Patient was in an orphans' home several times for running away from his grandparent's home. Was in correctional school

where he behaved himself well. Has a sister who is said to be "no good." A letter recently received states he had been a hard working farm hand for three or four years preceding trip west on his return from which he was struck by a train which killed his brother who was with him. He became violent at the Minneapolis General hospital. Psychopathic hospital diagnosis dementia praecox, at Minneapolis, dementia praecox or traumatic psychosis.

Physical examination upon admission showed cast upon fractured right leg and scar over left frontal parietal region, otherwise negative.

Patient became sarcastic and stubborn soon after admission. Explained in detail the accident, when he was hurt and his brother killed, was unconscious he thinks two days. Since the accident he has always felt a bit dizzy. Was returned to Chicago by the authorities of St. Paul and sent to the County hospital. He soon got into trouble there for entering women's ward which he states was because he had become lost while out upon the smoking porch. At the Psychopathic the doctor asked him if he had ever seen a woman floating in the air or a cat hanging from a tree and for a joke he told that he had. This account was well given but he denied the reports of violence. There was no evidence of hallucinosis or actual delusions. Case was left undiagnosed but the general impression of the medical staff seemed to be that he was of a psychopathic makeup.

In the hospital he had several attacks of explosive excitement, in which he was not violent but apparently on the verge of it. His general attitude was one of sullen martyrdom. Later he attempted to get out of a window in spite of a fracture from which the cast had recently been removed.

This boy denied his explosions and adopts a sullen attitude of injured innocence when questioned concerning them. Was his amnesia real? (And, for that matter, what do we understand by a "real" amnesia?) Or was he developing psychic epilepsy which might be inferred from his transitory periods of excitement and confusion with doubtful amnesia.

Still another case illustrates very well a combination of the explosive and paranoid types.

John P.—Admitted Nov. 13, 1919, Austrian, age 27, single, carpenter, family history negative, occasional drinker, well until accident, March, 1919 when a heavy weight fell upon his head. He became unconscious and was removed to hospital where he was operated on for depressed fracture.

The doctor who had charge of him said he made an uneventful recovery. A few small pieces of bone, however, sloughed out. Four months prior to admission several doctors testified before the industrial board that he was able to resume work. In fact, they thought he would be benefited by occupation. He endeavored at about this time to cash his pay check in a downtown bank and made some disturbances there but was allowed to go home. A little later he went to the doctor's office for disability certificate and when this was refused attempted to assault him. He was

sent to the Bridewell Hospital and later to the County jail. At the time of admission was said to be under \$5,000 bonds but the Judge had recommended that he be sent to the Psychopathic Hospital.

Patient, when admitted, presented a depression over the vertex of the skull—vision in left eye poor; pupils were equal and reacted but were irregular. Tongue deviated to the right and was tremulous. There was some unsteadiness of station and he limped with the left leg but there was no Babinski.

He told his story about as contained in the above account but said he did not remember the attack upon the doctor though he remembered going to his office. He recalled being placed under bonds and being taken to the Bridewell. Everyone was against him, two doctors, two insurance men and the police, even his lawyer. The only friend who was interested in him was shortly after shot and killed but the patient considered this merely a coincidence.

He had been troubled by severe headaches, especially while in the sun; would become dizzy and at times would feel as if something were loose in his head.

He was fully aware that his case was up for adjustment before the industrial commission. He was critical and fault-finding upon the ward, thought he would never get well if he did not get away soon, that he must be taken to a private hospital and that his stomach was out of order. General information poor, also impressibility. No hallucinosis, nor real delusions. Diagnosis—traumatic constitution with a question as to whether the limp was the result of organic lesion or not. Patient was finally paroled, condition unchanged, Jan. 15, 1920.

Paranoid developments are not an illogical development in a burdened individual who, as a result of head injury, becomes less able to carry on his work and in consequence seeks explanation for this failure outside of himself, i. e.:

Wm. N.—Admitted Oct. 22, 1920, age 53, married, carpenter; a great aunt said to have been insane. Patient is an abstract specialist. No epilepsy in the family. Twice married, divorced first wife "because she was hard to get along with." Drank quite freely years ago but little for the last five or six years. Wife stated that about eight months after he was slugged in a race riot he became irritable, complained of severe headaches night and day. He improved at times but quite steady work some six months prior to admission; worked half days for a time; developed a fear reaction and stopped work altogether. Two weeks before admission he was struck by an automobile; was unconscious for 10 or 15 minutes, then developed ideas people wanted to come into his home to kill him, was confused at times, suffered insomnia and was finally committed.

Physical examination upon admission was negative save for the left pupil which was said to be slightly larger than the right, both reacted. Wassermann was negative on blood and spinal fluid.

Patient himself gave a history of first head injury about two years ago and of "slipping" as he called it, during the last year and a half; could not work as he formerly had and finally had to stop. When asked what he considered the cause of his trouble he became agitated; cried; asked if it was necessary to go into details; was not sure as to whether he was right or not but thought his wife had taken a liking to a German; that she was in collusion with a doctor who was interested in her; and has been working in an office with many men which has made him suspicious. Ten days before admission he was struck by something that rendered him unconscious and awakened in a hospital (second injury). He was told he was struck by an auto but thought he was followed and slugged. His wife possibly may have had something to do with it. Perhaps she put him in the hospital to get a divorce. He would sift things to the bottom when he got out. . . . Diagnosis—Traumatic Constitution. He was paroled Dec. 23, 1920, by his wife and taken to a sanitarium.

Patient was reported Feb. 23, 1922, to be in good health and at work in a responsible position.

Under this same general heading of the traumatic constitution the neuroses associated with comparatively trivial physical injury would naturally be discussed were it not for the fact that during the late war and subsequently they have, together with those not connected with injury, acquired such importance and have accumulated such a literature as to forbid their treatment in a limited space. The subject of shell shock may be dismissed here with the statement that in general it represents the individual's retreat from an unbearable situation.

Mental defect, or dementia, is naturally the end state of such traumatic cases as do not die or recover. Dementia results either directly out of the primary lesions or from subsequent degenerative processes or develops as the result of epilepsy, alcoholism, arterio sclerosis, senility, etc. The picture is that of an organic dementia with loss of efficiency, weakened memory, loss of impressibility, poor grasp of the situation, more or less recessive behavior and possibly episodes of excitement, etc. Upon the whole it is a difficult state to differentiate from old dementia praecox but the diagnostic points already referred to may be of assistance.

Convulsive seizures may occur at any time following a head injury but *true epilepsy, in the sense of an organized habit of energy discharge, usually requires time for development, often many years*, and may then arise directly or indirectly out of heredity, alcoholism, arterio sclerosis, etc. Autopsy sometimes reveals bony spurs at the site of old hemorrhage or adhesions of the cortex to the scalp through a bony defect, cortical softening, pachymeningitis, etc. Bergerhans, Pfeifer and Perity* in 1918 reported from 12 per cent to 33 per cent of epilepsy in their head cases in the German army hospital service. Upon the other hand Percy Sargent** in

*Allge. Zeitschrift f. Psych. LXXIV, p. 610.

**Brain, Vol. XLIV, part III.

emphasizing the dangers attendant upon adhesions of cortex to scalp states that in a survey of 25,000 head cases made in England by a board of pensions in 1919 but 800 cases (only 4½ per cent) were found to be epileptic. In civil cases great care must, of course, be taken to make sure that a fit was not the cause of the trauma rather than the other way about. Thus the late Dr. Moyer in a personal communication to the writer stated that out of a considerable number of apparent cases of traumatic epilepsy carefully studied he found many where there could be little question but that the first fit was independent of any trauma. In such cases everything depends upon a most careful case history of family, patient and accident.

The part played by head injury in the precipitation of organic mental disorder at times affords opportunity for much argument.

Mary D., age 61, married, U. S., committed 2-19-21. Family history apparently negative. Patient was said to have been well behaved by her family and her neighbors until six weeks prior to admission, when she was struck by a taxi, was taken to a hospital and remained unconscious for about two weeks. Relatives stated that she had a skull fracture but the attending physician stated that he could discover none. During the latter part of her stay in the hospital she had to be restrained because she would not stay in bed. She would change the subject while talking, misidentified her children and "acted like a child."

Physician's examination showed an old lady, blood pressure 175-130, pupils normal, tremors of tongue, fingers, eyelids.

When examined she was quite restless, was not oriented, behaved as if she were in her own home, could not find her way about, and had no recollection of the accident, could not give the day or month, and misidentified persons; could not do arithmetic, retention poor. She was diagnosed at the Psychopathic hospital as senile dementia but in view of the accident, and neighbors having said she was apparently normal prior to it, she was diagnosed at the state hospital as traumatic dementia.

The patient was removed from the hospital and died at home shortly after. The coroner's physician found no evidence of hemorrhage, fracture or injury to brain. Blood vessels were engorged but no gross pathology. Heart was enlarged. Arterio sclerosis marked. Large white kidneys. The verdict read "Deceased came to her death from chronic heart and kidney disease complicated by dementia."

Here it would seem that the accident merely precipitated a senile dementia, but if the facts were as represented the trauma might even so be held accountable for the patient's mental illness and subsequent death since without it senile dementia might not have appeared for some time.

The following case presents another angle for consideration, although there was fortunately no question of liability:

Joseph C., admitted 3-31-21, 53 years old, Irish, Ireland. Father drank heavily. One brother in Elgin. Patient had been a bar keeper and

steady drinker for many years. Drank only occasionally since saloons closed. A few months prior to admission he slipped upon the ice and fell, was unconscious for an hour and dazed for several hours after. Some weeks later he became nervous, saw people looking in the windows, wanted to lock the doors and draw the window shades, seemed stupid and answered questions poorly, became forgetful, did not recognize his own children, diagnosed at the Psychopathic hospital as chronic alcoholic with deterioration.

Physical examination was negative, save for coarse tremors of fingers; blood pressure 120, spinal fluid negative. When examined patient was quiet and cooperative, denied drinking to excess. He remembered slipping on the ice and being assisted into the house but did not know how long it was before he came to himself; went to the County hospital on account of pain in the head; seemed stupid and not clear to remember what was done for him in the state hospital. Denied delusions or hallucinations. Did not seem to remember his paranoid ideas. General information quite poor.

Here again we have an instance in which the trauma served merely to intensify a mental state already existent although the relatives did not realize it, their attention being called to it only when he began grossly to misbehave following the accident.

And finally there are the great multitude of cases *where mental change seems to follow so closely upon an injury not affecting the head* that there would seem to be some degree of casual relationship. Unfortunately actual cases cannot be cited because they have been lost among other hospital records. However, a typical one would read something as follows:

John Doe, age 30-35, probably a foreigner, a laborer in the steel mills, we will say, and married, sustains a very moderate crushing injury of the hand and foot, possibly with loss of a part of a finger or toe, involving repeated dressings. He receives some sick pay and loafes about for several weeks, drinks more than usual and broods over his accident, wondering whether he will ever be as good a man again as he was before, etc. When the doctor finally tells him he can go to work he does so half heartedly and lays off a good deal. Finally he stops work altogether and begins to develop some loosely knit paranoid ideas, together with a general let down of interest in everything outside himself. Finally he becomes excitable and so irritable, even violent at times, that he must be committed.

The further course of the case is that of a mildly dementia praecox. What is the answer? Obviously not the trauma of the foot or hand causes dementia praecox. Very possibly the patient has an insane brother or sister in the old country. Perhaps the change was already incubating and a slightly lowered resistance due to the shock of the accident and the fear of permanent disability was enough to bring the affair to a crisis in an already burdened individual.

CONCLUSIONS

1. The pathology of mental disorders following physical trauma varies from apparently nothing at all, through microscopic changes to gross haemorrhages, loss of brain and bony tissue and massive infection. The latter are too familiar, the former too debatable ground for discussion here.

2. There are no pathognomonic symptoms. *"There is no psychotic entity which can be diagnosed as a traumatic psychosis without history of a definite relation of the mental disturbance to preceding trauma of the head."* Any form of mental disturbance may appear after head trauma. A list of somewhat classical finding in fairly definite cases has been given.

3. The diagnosis of malingering depends upon examination and extended observation. It is comparatively rare and probably always occurs in a low grade individual because it is a primitive type of reaction. Neurotic symptoms in one who is not malingering may improve or disappear after compensation is obtained. It is common for an invalid to make the most of his symptoms. Unconscious simulation is not malingering. It is a neurosis.

4. Amnesia occurs after head accidents, after the perpetration of criminal acts, in epilepsy, hysteria, etc. It must be thoughtfully evaluated whenever it occurs as a symptom; i. e., is the memory gap due to traumatic unconsciousness or to *an imperative need to forget?**

5. *Trauma not involving the head may precipitate a disorder which is not a traumatic insanity but some form of endogenous psychosis.*

6. Prognosis depends to a considerable extent upon the presence or absence of features pointing to the ordinary psychoses. Paresis must be ruled out in adults, dementia praecox in the young, arterio sclerosis in the elderly, senile dementia in the aged and brain tumor in all. Unconsciousness followed by delirium and confusion rather points to a frankly traumatic affair and has a more favorable prognosis.

7. An organic condition, as Southard so aptly expresses it, may become so wrapped about with a neurosis as to make diagnosis, prognosis and treatment all very difficult.

8. Liability, if in question, can only be determined after a most careful survey of the patient's family history, personal history and characteristics prior to the accident, together with all the medical facts obtainable.

*Vide "Hysterical Annesia Following Physical Injury," Charles F. Read, Jr. Mental and Nervous Disease, Vol. 58, No. 6, Dec., 1923.

THE OFFICE TREATMENT OF HEMORRHOIDS

By LEIGH F. WATSON, M. D., CHICAGO, ILLINOIS

More people are afflicted with hemorrhoids than with hernia or tuberculosis; probably one person out of every ten has piles. This fact is not surprising when one considers the large number of predisposing and active causes of this condition.

The average person with hemorrhoids is able to be up attending to his business without extreme discomfort. He suffers considerable annoyance, but an operation, with the intense postoperative pain and long detention from business that he associates with it, is not imperative. The term "hemorrhoid operation" has usually meant a general anesthetic with a Whitehead or cautery operation. These methods are too severe, although they were no doubt necessary before the injection treatment for internal piles, and the simple operative procedures for external hemorrhoids were developed to their present state of efficiency.

I want to make a plea for the nonoperative treatment of internal hemorrhoids in selected cases, and the simpler operative measures to replace the Whitehead and cautery operations. I believe if more conservative measures of treatment are encouraged, that many more of these hemorrhoid patients will seek relief. Some of them are unwilling or unable to submit to hospital treatment for piles, and they will not consult the physician who offers only operation, therefore, too many of them, against their judgment, fall into the hands of the advertising specialist.

DIAGNOSIS

A majority of the hemorrhoids seen by the physician are primary, and either internal or external in character. The internal hemorrhoids are usually divided into the varicose and capillary varieties. The varicose pile protrudes when the patient strains and is the source of considerable inconvenience. The capillary form bleeds at frequent intervals and gives the patient annoyance from irritation and tenesmus, but does not protrude. Patients suffering from capillary hemorrhoids are often in poor health from long continued loss of blood. The external hemorrhoids are thrombotic or the connective tissue varieties.

PREPARATORY TREATMENT

To secure the best results with injection or operation, it is necessary to have the lower bowel empty. The neglect of this measure will make any treatment of hemorrhoids unsatisfactory. One or two days before treatment the patient should receive a laxative, and ten hours before the operation an enema of 10 per cent hydrogen peroxid. No enemas should be given within six hours of the time of injection or operation.

INJECTION METHOD

The injection of weak quinin and urea solution into internal hemorrhoids represents a great advance in the treatment of bleeding or prolapsed

piles. Ninety per cent of all cases of internal hemorrhoids can be cured by this treatment without pain or discomfort to the patient and little or no detention from business. To employ this method successfully, one must be able to make a positive diagnosis of uncomplicated internal hemorrhoids. The injection is never indicated in external hemorrhoids, in either the thrombotic or connective tissue type. To use it in these cases is to court certain failure.

Technic of Injection:

The technic of the injection is always delicate, it varies in each type, and must be modified and adapted for each individual patient. Into the most prominent part of the small pile, five to ten minims of the quinin and urea solution are injected. The strength of the solution should vary in different cases, from 2 to 10 per cent, the stronger solutions being used in the more vascular types. Solutions stronger than 10 per cent must never be used because of the danger of sloughing. Massive protruding internal hemorrhoids should be treated by the injection of one to two ounces of 1/20 to 1/10 per cent quinin and urea solution.

The solution must be deposited well within the pile and never in the skin or mucosa. Only one hemorrhoid is treated at a time, and it is advisable to give the treatments from one to three days apart, so that the slight swelling from the injection will not inconvenience the patient. Novocain anesthesia should precede the quinin and urea injection if the treatment is to be made painless. The strictest asepsis should be observed. The field of operation should be carefully prepared, and the syringe, needle and quinin and urea solution should be sterilized.

The full effect of the injection will not be apparent for two to four weeks, but the relief from the bleeding and pain will follow the first treatment. The pile first swells and then gradually becomes smaller, finally disappearing.

OFFICE OPERATIONS

There are several simple operations for hemorrhoids that can be performed in the office. Since it is possible with the perfected technic of local anesthesia, especially the method of Reclus, to block completely the nerve supply of the sphincter muscle, permitting a painless dilation to any desired degree, the indications for general anesthesia in rectal work have become very limited and are governed largely by the skill and experience of the physician in the use of local methods.

Thrombotic hemorrhoids are due to clotted blood in the loose cellular tissue around the terminal veins. The injection of a few minims of novocain solution (1/2 per cent) into the skin surrounding the hemorrhoid will permit a painless incision, which should be made in the line of the radial fold, and the clots removed with sharp forceps or curette. Squeezing the clots will make the pain more severe and at times cause swelling of the parts. Usually a suture is not required as the folds of the anus tend to keep the edges of the wound in approximation. When this operation is properly performed the relief from pain and discomfort is immediate and

there is no postoperative swelling or bleeding and the patient can return at once to his work.

Connective tissue hemorrhoids are usually known as "skin tabs" and are uncomfortable and annoying from prolonged inflammation. Palliative treatment is worthless and injection treatment will increase the size of the tumor. The only satisfactory treatment is to infiltrate the pile with $\frac{1}{2}$ per cent novocain solution and clip it off exactly flush with the skin. The wound should be sutured to hasten healing.

Ligature Operation:

This operation is popular because of its simplicity and rapidity of application for small internal hemorrhoids. After the usual preparation and injection of the superficial and deep nerves by Reclus' method of local anesthesia, the sphincter is moderately dilated and the lowest pile grasped with a hemorrhoidal clamp or narrow bladed forceps. I always ligate the smallest and lowest pile first, so the blood will not obscure the field of operation and there will be no danger of any small tumor being overlooked. Next, a groove is cut around the lower two-thirds of the pile and the tissues separated up to its base. The pile is then ligated with chromicized catgut. The hemorrhoid is cut off, leaving sufficient pedicle to prevent slipping of the ligature. It is usually wise to transfix the pedicle to guard against loosening of the ligature.

As much mucous membrane as possible should be left between the ligatures, and all longitudinal incisions should be sutured transversely, to promote healing, and to make the patient more comfortable, to make the bowels move easily, and to prevent contraction and stricture. An extensive removal of subcutaneous tissue is a frequent cause of stricture; the base of the ligature should be as narrow as possible and at the same time it should safely secure the blood supply.

Clamp and Suture:

The pile is grasped in the long axis of the bowel with a long, narrow, half curved pile clamp, the blades being closed just within the mucocutaneous margin. Inclusion of skin or muscle will cause severe postoperative pain. The pile is cut off, and the suture of linen or chromicized catgut is begun and tied just above the upper end of the clamp to secure the hemorrhoidal artery, then continued as an overhand suture around the clamp until the lowest end of the pile is reached when the clamp is removed, and the suture tightened and tied.

POSTOPERATIVE TREATMENT

Codein or morphin sulphate with atropin, both before and after operation, is usually indicated to prevent painful contraction of the sphincter muscle.

The bowels carefully prepared before operation, should be kept at rest one to two days, when a dose of olive or mineral oil is given. When the bowels feel inclined to move an enema of 10 per cent hydrogen peroxid in olive oil should be given to make the action painless.

The after-treatment consists in administering an intestinal antiseptic to prevent gas formation, bathing the parts in warm water to prevent painful contractions of the sphincter muscle, and the daily applications of carbolized vaseline through a pile tube. The use of suppositories is seldom required, besides they are inconvenient and difficult to insert after a hemorrhoid operation.

30 North Michigan Avenue.

THE ROLE OF FATS IN NUTRITION*

By DR. HARVEY W. WILEY,

Formerly Chief of the Bureau of Chemistry, United States Department
of Agriculture

The terms "fats" and "oils" have a general and somewhat definite meaning. We speak of an oil as a substance which is liquid at ordinary room temperatures. On the other hand, our idea of a fat is a substance that is not liquid at ordinary temperatures. Nearly all vegetable fats are oils and many of the animal oils are fats. By an appropriate raising of the temperature, all fats become liquids and assume the consistency of the oils.

In so far as the composition of these bodies is concerned, it is not changed by the state of the consistencies. Fats and oils are alike in their composition and in their nutritive relations. There is a little difference in this respect. While many of the edible fats are not liquids at room temperature they become practically so at the blood temperature or, perhaps I had better say, at the stomach temperature. But even if they are not liquid at blood heat they are usually so soft that they lend themselves very well to the process of digestion.

In so far as oils are concerned, we owe the term to the Latin language *oleum*. In so far as fat is concerned, I do not want to get out of my bailiwick, but I would not be at all surprised to find that we went to the Greek language for fat.

The Greek word *aliphas*, the genitive of which is *aliphatis*, means fat. We have, then, good classical grounds for our nomenclature. That, however, has nothing to do with their nutritional properties. There is little use to try to distinguish between vegetable and animal fats in so far as their nutritive properties are concerned.

COMPOSITION OF FATS

The fats as they exist in Nature, and I now embrace oils and fats under the same term, have all the same general constitution. They compose a chemical union of a somewhat fragile character in which the fat acids are united with glycerin or glycerol, as the chemist calls it.

*Read at the 5th Annual Convention of the Institute of Margarine Manufacturers, June 13, 1924.

It is quite universal in this form that this valuable food product is presented to the human digestive organs. This union of fat and glycerin is commonly known as a glyceride. The nature of the combination is not at all different in fats of animal or of vegetable origin.

Although butter is an animal product, its purity and cleanliness are not guaranteed in any respect by the Bureau of Animal Industry. For this reason, the manufacturers of butter may use materials which, as I have already pointed out on several occasions, are not by any means in the bracket of Caesar's wife.

It would be a somewhat difficult and, perhaps, impossible task, to state just what may be encountered in the materials entering the creamery. We have had stories before the Internal Revenue Bureau which lead us to suspect that there are some cases, especially in the hot weather, when the materials entering into manufacture would have a difficult task to pass the inspectors of the Bureau of Animal Industry were they once ever assigned to the supervision of these materials. But that is another story.

Having now the suitable materials ready for use, we are able to go ahead with our study. It is a simple thing, if one can just put it over in that way, to understand what takes place when fats enter the human stomach. We are acquainted with the process of mastication and deglutition, so we will not spend any time there. When the food enters the stomach, in so far as the fats are concerned, it has a rest. There practically is nothing doing in the way of digesting of fats in the stomach. It is evident; however, that fats cannot enter the blood as fats. Something must happen to them before they can get through the membranes. The thing that does happen is a kind of soap-making. I do not want to use this term in any deprecatory sense nor to frighten people away from using fats. I am telling exactly what takes place. Not a real soap-making but a kindred process. The fats are first decomposed but, in the absence of sufficient alkali, no real soaps are made. The chemist uses a great big word to express what goes on. He says the fats are hydrolized. Strictly speaking, that means watered, and yet fats are not like railroad stocks. They are not watered in that sense. They are broken up into free acids and free glycerin. This process is effected by a ferment.

We ought to be ready now to raise a monument to the pancreas. There is no one digestive organ that plays so many important roles. Not only is the pancreas the great digestive organ, furnishing the greater part of the ferments of all kinds which attack all classes of foods, but, in addition to that it has another product not a ferment, at least not following the line of production of ferments, but apparently discharging its useful material directly into the blood. The pancreas is the great fire kindler. You might call it the matchmaker of the human fireplace. This secretion starts the fires that burn the blood sugar. That is some fire because about two-thirds of all the food we eat is sugar or starch. If it is sugar, it cannot be burned so long as it is cane sugar. It has to be converted into

glucose. Not the ordinary glucose that you are thinking of now, this stickly white mass that they use to dilute our candy with, but real glucose in the chemical sense, or dextrose as it is sometimes called which is the form in which sugar is most easily digested.

All the starch that we eat is also converted into a sugar of this kind and without this kindling wood from the pancreas the sugar would never be burned, and that is what happens when we have diabetes.

But the thing in which I am interested just now is that the pancreas also provides most of the ferment (lipase) which causes the digestion of the fat and renders it suitable for burning in the body. And more than that, this interesting little fact should not be forgotten. The principal purpose of fat is to furnish the fuel of the body. Fat is not utilized, as most people believe, in making other fat. It is utilized to furnish the fuel of the body so that the sugar and starch can be partly converted into fat. The fats that are stored in our body do not come from the fats we eat but from the sugar and starch we eat. Yet the fats themselves cannot be burned in the body unless the fire is started by sugar and that is what hurts the diabetic. It is not so much the presence of sugar in the blood but the presence of unburned or imperfectly burned fats in the body. Hence, for the complete combustion of fats there must be preliminary combustion of sugar. It is thus seen how intimately related are all the digestive processes, one depending upon the other.

Fat is the ideal fuel. One gram of fat will produce over nine calories of heat. One gram of sugar or starch, or one gram of protein will only produce a little over four calories of heat. Hence, weight for weight, fat is worth more than twice as much as the other combustible foods to keep the body warm.

Now, it seems to me, we would enjoy our meals a great deal better if we know exactly what the delicious fats we eat were going to do for us. It surely would please the boy to think that candy was not all going to be burned up in the body but that gravy would be, while in his fond imagination the candy would be left to linger with its lovely sweetness. In this, of course, the boy would be disappointed, but we will let him find that out himself. He will have more gravy.

"BALANCED" DIET

Now, what does this phrase mean that we so often hear these days. "Balancing the ration?" We know what balancing the budget means. Many Nations know what a difficult problem it is to balance the budget. Balancing the ration is a much easier problem but requires more real knowledge than to be a financial expert. The person who knows how to balance the ration knows about two hundred things more than J. P. Morgan. More than that, balancing the ration is about two hundred times more important to the human race than balancing the budget.

Well, the best way to answer that question is to cite what happened

to the central Nations of Europe during the World War. The story is a tragic one. There was a tremendous dearth of fat of all kinds, especially edible fats. Without the proper amount of fat the other materials which were available for food could not perform their real functions. We have seen how an abundance of carbohydrates, that is, starch and sugar, is necessary to burn the fats. The proper amount of fats are also necessary in order that the sugar and starch will burn properly, hence not only was there a partial starvation due to the absence of fuel in the body, but it created a profound disturbance of digestion which rendered the foods which were available insufficient to support properly the vital reaction.

I have not time to go into a discussion of the details of the terrible effects which were produced among these partly starving Nations due to the absence of a proper amount of fat. That one object lesson would be sufficient if we had nothing else at hand to impress upon our people the immense importance of a proper fat ration.

In the burning of the fat which gives us energy and power it is important to know the character of the smoke produced. In the normal burning of fats there are two products which we may call smoke. One is water and one is carbon dioxide. The smoke, therefore, of fat combustion is exactly like that of the combustion of coal and wood. It is a fortunate thing when there is no ash left, but we cannot always depend upon that. Not only is there often ash, but of the worst kind. It is very much like clinkers, especially the fusible clinkers which stop up the throat of our stove. These clinkers are very deadly, especially those that are produced in diabetes. Although the fires are kindled in these conditions they go out and the residue produced is not water and carbon dioxide, as it should be. It is oxybutyric acid and diacetic acid. These sound like big names but they are easily explained. Oxybutyric acid is that acid which gives to butter its flavor and disflavor. It either produces a delightful taste such as butter possesses, or gives it an awfully bad taste and smell, as in the case of decayed butter. The only difference is that this clinker has a little more oxygen in it than the ordinary butyric acid.

All the facts which have been collected in regard to the digestion of fats go to show the immense importance of the proper amount of fat in our foods. There must be other undiscovered relations which some time will be known for the imperative balancing of the fuel budget so that it may contain not only the proper amount of fat and of the proper kind, but also all the other essential ingredients of the diet.

PLIGHT OF LADY AGRICOLA

I do not know whether there are other producers of milk that occupy the position I do in regard to ethics in business, a position which has led them, as it has me, all my life to plead for a free and unrestricted market for all wholesome food products. My dairy now produces approximately 200 gallons of milk a day and, of course, it is a matter of importance in

these hard times of the farmer to secure a good market for the product.

I am not going to discuss here the sad plight of the lady Agricola. She is undoubtedly sick. Apparently most fatally so. She has a vast army of physicians attending her. They are not all prescribing the same remedy. Ever one claims a specific which will effect a cure. Like other sick women, she is inclined to be hysterical and often asks for things which are not good for her, so I shall leave to others the treating of this sick lady. I would like to see her restored to health and vigor, and I think everyone else would if we only knew how. But one thing I am sure of, she never will be cured by Act of Congress. Her environment may be ameliorated by wise legislation, but any cure that comes must be due to her own vitality just as it is in all diseases.

I do not ask for any legislation which gives my product a preference in the markets over other products of like or unlike kind. From the very first I have opposed the legislation which fixes taxes and conditions about one fat product which does not apply to all of the products. My record may be searched from the beginning of my public service until today and it will be found entirely free of any plea for specific exemptions of food products. For this reason I am perfectly willing to ask for a tax on colored oleomargarine, provided at the same time a similar tax is placed upon colored butter. There is one thing which everyone learns sooner or later and that is that nothing but the truth and nothing but similar treatment will stand the test of time and the standard of ethics. The most criminal of cowards is the man who tampers with truth.

FAIR COMPETITION

It is the farmer who produces all of our food products and all of our food products should be treated exactly alike in the eyes of the law. The farmer justly wonders why corporations and combinations are allowed to put up prices so as to cover expenses of their business and secure a reasonable rate of income on their investment. By combinations of labor the farmer is paying from two and a half to three times as much for farm labor as he did ten years ago. The things he grows, many of them, are selling for less than they did ten years ago. If it is right and proper to permit other kinds of business to earn a reasonable income, then it is right and proper that the farmer should be allowed to fix a price for his product which will pay his expense and yield a reasonable income.

The man who owns dwelling property in Washington is not allowed to bargain with his tenant as to the amount of rent he should pay. That is declared by an independent Committee under authority of Congress. The tenant, of course, has rights and ought not to be cheated, but it seems to me that is not the way to go about it. Free and fair competition and supply and demand will regulate all prices of commodities, including labor and material if all restrictions are removed. It seems to me, therefore, there are only two things to be done to regulate all prices, beginning with

the farmer, or abandon all regulations of every description entirely and go back to the natural law of supply and demand. Whenever we come to that stage, the farmer will have the full privilege of open competition and of charging prices in proportion to the demand and supply.

This is not particularly applicable to the problem of the digestion of fat, but the possibility of buying fat is deeply concerned in this unnatural state of affairs. I should like to see, therefore, the special restriction imposed upon margarine removed and one law apply to all fats of every description.

EDWARD LIVINGSTON TRUDEAU

BY ELIZABETH COLE

"Over the doors of the hospitals for consumptives twenty-five years ago might well have been written these words: 'All hope abandon ye that enter here!' While today, in the light of new knowledge we may justly place at the entrance of the modern sanatorium the more hopeful inscription: 'Cure sometimes, relief often, comfort always.'"

That was said by Edward Livingston Trudeau before his death nearly ten years ago and to him belongs much of the credit for the change. During his lifetime tuberculosis from being considered a hopeless disease came to be regarded as a curable one. Open-air sanatorium treatment, begun in this country by Dr. Trudeau in the Adirondacks, was greatly responsible for this "light of new knowledge" that brought about the change.

Edward Livingston Trudeau was born in New York City on October 5, 1848. His boyhood was spent in France in pleasant, comfortable surroundings until after the Civil War in 1865 when he and his older brother returned to New York. Then something happened that changed his whole life. His brother, always delicate, developed tuberculosis. There were no trained nurses then, no knowledge of the need for disinfection and care of the germ-laden sputum. The doctor, even, cautioned against opening the windows and once a week would usually leave a new kind of cough medicine. For four months, until his death, Trudeau nursed his brother, sleeping often in the same bed with him and taking absolutely no precautions. "How strange that, after helping stifle my brother and infect myself through such teaching as was then in vogue, I should have lived to save my own life and that of many others by the simple expedient of an abundance of fresh air!" he says in his autobiography.

For Trudeau did become infected by his beloved brother. His life in New York at that time was carefree and easy and, had it not been for the influence of Miss Lottie Beare whom he loved, Trudeau would undoubtedly have become lazy and dissipated. But in 1868 he decided impulsively to become a student in the College of Physicians and Surgeons. His father had been a doctor, and his mother's father, a French physician whose ancestors had been physicians for many generations, so that although the new life was difficult and it was hard to break away from his less serious-minded

companions, he must have inherited a sincere love for the work. The year before he was graduated he had convinced Miss Beare that he was not like the frivolous set who were his friends. They became engaged and were married in June, 1871, three months after he passed his examination for M. D.

Some swelling of the lymphatic glands on the side of his neck was the cause of his seeing a well known English physician while in Liverpool on their honeymoon. He said the glands were an evidence of a run-down condition and a tendency to scrofula, advised him to paint them with iodine, eat plenty of bacon for breakfast and take a tonic with iron in it! Neither Trudeau nor the doctor realized these glands really indicated tuberculosis. Later he had several attacks of fever but it was considered to be malaria and he took quinine for this. On the spur of the moment, however, when he had found his temperature to be 101° he dropped in one day on the late Dr. E. G. Janeway, of New York, a skilled diagnostician. He found "the upper two-thirds of the left lung was involved in an active tuberculosis process."

In his autobiography Trudeau says: "I stood on Dr. Janeway's stoop, I felt stunned. It seemed to me the world had suddenly grown dark. The sun was shining, it is true, and the street was filled with the rush and noise of traffic, but to me the world had lost every vestige of brightness. I had consumption—that most fatal of diseases! Had I not seen it in all its horrors in my brother's case? It meant death and I had never thought of death before! Was I ready to die? How could I tell my wife, whom I had just left in unconscious happiness with the little baby in our new home? And my rose-colored dreams of achievement and professional success in New York! They were all shattered now, and in their place only exile and the inevitable end remained!"

And so they went to the Adirondacks and began there the life of hardship in the forests around Saranac Lake. In a wilderness then, with a 42-mile drive from Ausable Falls to Paul Smith's primitive though comfortable sporting resort, Trudeau began his "cure" in the clean air.

This step on the part of the great pioneer doctor probably furthered the cause of tuberculosis more than any other step taken by an American. No greater departure from former treatments of the disease could possibly have been made. Instead of going to a warm climate and remaining indoors with closed windows and no sunshine, Dr. Trudeau braved the coldest, snowiest winters. His many medical friends were open-mouthed with astonishment at his daring and when it was found that he had withstood the Adirondack winter they began to admit there must be something of value in the treatment.

Other tuberculosis patients wished to find the power of healing that seemed to be in the woods and fresh air. The treatment was costly, however. Trudeau thought of the multitudes of poorer persons in the cities who were dying of his own disease and it was to help these that he conceived the idea of a cottage sanatorium there in the Adirondacks. He had no money with which to finance such a hazardous proposition and it was nec-

essary to turn to his friends for financial help. Fortunately throughout his life, Trudeau's enthusiasm, his winning personality and now his undaunted courage in fighting his sickness had brought him many friends who loved and admired him. Little by little he convinced wealthy persons of the benefits that might be brought to sufferers who lived in the city. He begged from friends, from strangers; from everyone who he felt could well afford to help increase his sanatorium fund. At length he started with one little cottage and two factory girls from New York were his first patients.

His wife, his assistant physician, nurses, and the many mountain people who had grown to love Trudeau—all contributed toward keeping him from being discouraged during the first years of his new undertaking. Working at first in makeshift quarters for a laboratory, Dr. Trudeau became the pioneer of the treatment for tuberculosis which is used the world over today. Later he had the first research laboratory in America designed especially for the study of the tubercle bacilli then causing the death yearly of one-seventh of the population. From his experiments on rabbits and guinea pigs he was able to demonstrate particularly the value of fresh air and good environment as contrasted with bad air and poor environment in tuberculosis.

Trudeau, himself, was never wholly cured. He often endured intense suffering and many times his life was despaired of, but the clean breezes of those mountains and his "beloved pines" always rallied him and he lived until 1915.

Trudeau Sanatorium, started forty years ago, in 1885, is a beautiful memory of him. Next year will be celebrated there the fortieth anniversary of the beginning of this new treatment for tuberculosis. During these years many other sanatoria have been started throughout the country and the work of preventing and curing tuberculosis has been greatly expended. Trudeau's contribution to the world through tuberculosis study and through the rest and open air treatment has meant such a great saving of lives that wherever one is restored to health by his treatment the inspiration of Trudeau lives on. No greater tribute can be paid to the man than this thought.

Today in the United States there are available nearly 70,000 beds for the care of the tuberculosis and it has been estimated that not less than 800,000 persons have passed through these sanatoria in the past decade. Of these close to 600,000 are still alive and this fact means that 6,000 less deaths have occurred than would have had sanatorium beds not been available. Some of these are private and many of them have been made possible by Christmas seals that support the work of anti-tuberculosis associations.

Trudeau was elected the first president of the National Tuberculosis Association in 1904. Their work, begun and influenced by Dr. Trudeau, is supported by the annual sale of tuberculosis Christmas seals. His spirit, ten years after his death, is just as keenly felt and is today just as much of an inspiration to continue the work to prevent tuberculosis and diminish the yearly death toll.

Those who help in the seventeenth annual Christmas seal sale are perpetuating the memory of one who helped to bring "cure sometimes, relief often and comfort always" to thousands of disheartened sick persons.

HAVE YOU TUBERCULOSIS? WAIT! ARE YOU SURE?

Science has discovered that the germs of tuberculosis enter the bodies of seven out of every ten people during childhood. You are probably already infected. You are in no danger from tuberculosis so long as you keep well and strong enough to resist the attack of the germs.

There is an organized war against tuberculosis carried on by the tuberculosis associations. Its object is to keep you strong and well, and to stamp out the disease so that others will not be infected. This war is financed by the annual sale of Christmas Seals.

Christmas Seals save the lives of nearly 100,000 people every year. Indirectly they may have been the means of saving yours. Help in this work. Buy Christmas Seals. You not only protect yourself, but you help others not so fortunate. Buy Christmas Seals, and buy as many as you can.

RADIUM THERAPY

A BRIEF SKETCH OF THE SCIENTIFIC BASIS FOR ITS THERAPEUTIC USE

BY J. C. VORBECK, M. D., ST. LOUIS, MO.

The vital living human organism is an electro-chemical machine whose manifestations of life, vital phenomena or physics, are dependent upon the uninterrupted agitation of its particles.

By particles is meant, of course, the molecular bodies and atoms of matter of which the human body is composed. By this process of agitation the complex chemical substances are reduced to simple chemical or molecular bodies and the instable atoms are broken up into ions of electro-positive and electro-negative particles of matter or protons and electrons respectively.

To the electro-positive and electro-negative polarization of the elements of which matter is composed, therefore, are due the instability or molecular change and atomic disintegration of matter which in turn accounts for the agitation of the particles composing the human body.

This electrical influence or electro-magnetic phenomena upon which the agitation of the particles of matter is based requires that the atoms which unite to form molecular bodies be charged positively and negatively in varying degrees of intensity.

Under the principle that unlike forces attract each other and like forces repel each other, the positively and negatively charged atoms become united or mated, as it were, molecular bodies being formed thereby. Under the principle that the weaker force yields to the greater force the continuous introduction of opposite forces (oxygen, and nutrient material supplied) of fluctuating degrees of intensity results in the uninterrupted shifting or mating and alienating of the positive and negative atoms or particles of

matter. The shifting of these electrically charged particles of matter implies, of course, the release of electrical energy, the yielding of heat or kinetic energy, and the transformation of matter.

Thus the vital phenomena, that is, heat and energy, displayed by the living body are accounted for as is also its metabolism both constructive and destructive.

The definite quantities and relative proportions of the various substances which enter into the composition of the normal living body coupled with the electro-chemical or physio-chemical facts explained account for the specific period of time in which each and all of the regular series of alternate motions and events, comprising health or the normal physiological processes of the human body, take place.

The introduction into the human body, therefore, of highly charged electro-positive and electro-negative particles of matter must of necessity, by their mere presence, accelerate the shifting of the positive and negative particles of matter composing the human body. Not only metabolism but the differentiation of cell life must be promoted thereby.

These phenomena undoubtedly take place when the Alpha and Beta rays of radium, which are highly charged electro-positive and electro-negative particles of matter, are set free in the human body.

The chemical composition of the human body, the physics of radium and its atomic instability and constant disintegration, together with the easily demonstrated molecular and even ionic-disassociation of matter by electrolysis are ample proofs of the soundness of the principles involved in the foregoing demonstration.

The therapeutic use of radium therefore as an adjuvans in the treatment of intractable disorders of metabolism involves but one question, that is, the matter of dosage. This obviously should be in infinitesimal quantities either of the radium element or of its emanation in radioactive equilibrium with the quantity of radium element specified.

5247 Vernon Ave.

In a lecture "Bakteriologie und Patentrecht" by Dr. Fritz Warschauer, Berlin, Patent Agent, delivered on the recent meeting of the German scientists and physicians at Innsbruck the bacteriology has been, for the first time, discussed minutely from the point of view of the German patent right. The lecturer showed on hand of numerous specifications that the German Reichs-Patentamt has, in acknowledging a justified claim, granted patents for bacteriological process. According to former decisions an invention was considered to be patentable in Germany only if it related to mechanical or chemical treatment or working up of raw materials, viz. if by technical means a technical effect was obtained. In praxi the Reichs-Patentamt has however given up this antiquated notion, probably in consideration of the development of the bacteriologic science, and by a recent decision it has expressly acknowledged that processes and methods are patentable which utilize the vital proceedings of nature.

A list combined by the lecturer showed that many famous scientists and leading chemical factories are inventors and proprietors of the bacteriological patents.

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CAPITAL PUNISHMENT

We wish that pacifists and other weak-minded persons opposed to capital punishment would carefully read the following abstract of a letter from the American correspondent to the *Journal of the American Medical Association* in the issue of February 14, 1925:

CAPITAL PUNISHMENT

"When one realizes that in the United States, in 1922, with a population of about 110,000,000 people, there were approximately 9,500 homicides and but 114 executions, whereas in Great Britain and Wales, with approximately 40,000,000 people, there were but sixty-three murders, we cannot help feel that capital punishment has not been the deterrent factor that its advocates hoped it would be. This may be due to the fact that men who are sent to Sing Sing for electrocution are frequently with us for from one to one and one-half years before the death penalty is finally inflicted. The deterrent influence has been considerably lessened, it seems, by the long lapse of time between the commission of the crime and the carrying out of the penalty. I feel that it is an injustice both to society and to the prisoner sentenced to death to have such a long delay. One reason why we have so many more murders here than in England is that in England they have swiftness and sureness of justice, while here it is slow, often evaded, and often mild in proportion to the offense committed. The machinery is too slow, too slack and too weak."

We wish those opposed to capital punishment would hammer into their heads that with 9,500 murderers we only executed 114. In Great Britain, with more than one-third the population, only 63 murderers and all executed. The weakness of capital punishment in this country consists of the fact, as clearly shown here, that out of 9,500 murders, more than 9,300 escape. If 9,500 executions had taken place, there would not have been more than 100 murders the next year. It is not the fault of capital punishment which prevents homicides in this country, but our rotten judicial system, the executives from whom pardons can be purchased, and the contemptible indifference to law and order in this country generally. It should also be remembered that life imprisonment in this country averages not more than ten years.

So there is no reason why you shouldn't murder anybody objectionable to you because the chances are a hundred to one that you won't be executed; that your life imprisonment at best won't be more than ten years, and if you have plenty of money you will be pardoned at your convenience.

E. J. D.

WHAT THE PATIENT NEEDS

We offer a few more words this morning on the subject of doctors who specialize and doctors who go in for general practice. Good men of the former sort are plentiful; good men of the latter sort are rather scarce, and growing scarcer all the time.

The members of the American Medical Association's annual congress on public health, now in session here, should realize the importance of this problem to the patient. It does the patient little good to know that he can find plenty of capable specialists. How is he to get his case properly diagnosed, if the general practitioners are not reliable?

A specialist naturally exaggerates the influence of the conditions in which he specializes. Often a patient will go to a stomach specialist, and be told that his case is primarily one of the stomach; then he will go to an eye, ear, nose and throat specialist, and be told that his ills come principally from complicated conditions in the adenoids and the ethmoidal sinus.

When Hippocrates, more than four centuries before Christ, founded the science of medicine, he little dreamed that a time would come when a patient would be treated serially by a number of specialists, each of them focusing on one part of the body and ignoring the whole.

The science of medicine is more complicated now than in the days of Hippocrates? There are far more things to learn? All true enough; but a modern doctor with the genius, the profound clarity of mind, of Hippocrates, would not let himself be stumped.

He would find a way to learn all the principal things to be learned about doctoring as a whole. He would find a way to diagnose a man's case, or at least he would know where to send the man to get the case properly diagnosed. In brief, he would find a way to make use of the different sorts of specialists, just as a man at the head of a great industrial enterprise knows how to make use of the various subdivisions in his business, though he himself may be ignorant of the technical processes used by many of his obscure subordinates.

A man in search of health is out of luck if he doesn't know a good general practitioner. Making the rounds of the various specialist-minded specialists, he may spend vast sums and may subject himself to unnecessary operations, all because he knows nobody who is competent to view his case as a whole.

Gentlemen of the congress on medical education and public health, you have no greater problem than this one of taking a young man and training him as an all-around physician.—*Chicago Journal of Commerce.*

MEETING AN EMERGENCY

Two delicate tonsilectomy operations performed in an emergency under the illumination of an ordinary pocket flashlight were recent illustrations of the ingenuity of modern surgery as demonstrated at the Phoenixville Hospital, Phoenixville, Pa., by one of the staff surgeons.

The removal of the tonsils in each case was effected with the same speed and success as though the room had been flooded with the usual light from the central electric fixture. Both patients were children, under the care of Phoenixville physicians, who administered the anesthetic for their respective cases.

The operations were scheduled for the late afternoon. The operating room was bright with sunlight when the first patient was wheeled in and the anesthetic administered. Just as the surgeon began the operation a heavy storm cloud obscured the sun. The operating room was immediately thrown into the deepest gloom.

A nurse hastened to the electric light button controlling the central dome and pressed it. Nothing happened. A hasty investigation showed that the electric current, supplied from outside the building, was turned off. Faced with so unexpected an emergency and unable to proceed in the darkness, the surgeon called for a flashlight. One was found in the possession of a night nurse off duty, an ordinary two cell type.

While a nurse held it so that its rays were directed into the patient's throat, the operation was continued and completed in practically the same time that would have been required had there been no trouble with the electric lights. As the other patient had been gotten ready prior to the failure of the lights, and the flashlight had proven so satisfactory a substitute, it was decided, after consultation, to perform the second operation under the same illumination. After the anesthetic had been administered, progress in the second case was even more rapid than in the first.

On the following day the hospital board received a request from the superintendent for a flashlight in each ward, and within twenty-four hours the hospital equipment included six of the little pocket lights.

GRANT HOSPITAL

Chicago, Ill.

It is pointed out by William H. Rehm, president of Grant Hospital of Chicago, that one phase of building construction has not kept pace with the ever increasing population of our city. Office buildings, apartments, factories and warehouses have been springing up all over the city, yet hospital construction has been practically at a stand still for the last decade.

A survey of the hospital situation in the city of Chicago shows a most astounding shortage of beds. Especially is this true in the case of the north side hospitals. Grant Hospital has been operating in the city for over forty years, growing from an institution of thirteen patients to one with a capacity of one hundred and fifty.

The hospital is well equipped with modern medical apparatus, which includes the latest X-ray equipment; well appointed operating rooms; and one of the finest research laboratories in the country.

At the present time there are in training seventy-five student nurses. The training department is recognized by the various nursing associations as being highly efficient. At Grant Hospital the housing of nurses in training and in attendance has been one of the big problems.



THE PROPOSED NEW NURSES HOME

The demands for medical aid far exceed the equipment and capacity of the hospital. It is to meet this demand that the Board of Directors decided to put on a campaign for one million dollars. The plans prepared by Richard E. Schmidt, architect, provide for one six-story addition, which will make it possible to take care of three hundred patients at one time. The plans also include a new nurses home, allowing the institution to train one hundred and fifty nurses at one time.

It is pointed out by Mr. Rehm that the hospital is doing a large amount of charity, over one-third of the patients admitted being charity cases. The hospital is open to all regardless of nationality, religion or creed. The hospital is not operated for profit. Clinics of various descriptions are held reg-

ularly at the hospital and are open to all physicians desiring to attend.

Subscriptions to the million dollar fund may be mailed to H. B. Chamberlin, Grant Hospital of Chicago, room 404, 10 N. Clark street. Checks should be made payable to Rudolph S. Blome, treasurer.



The above picture shows the buildings as they will look when additions have been made to the present hospital. It will provide accommodations for five hundred beds, with added facilities in the way of operating rooms, X-Ray Department, laboratories, clinics, etc.

PREVENTION OF POSTOPERATIVE HERNIA

A muscle-splitting incision should be used when possible. In long incisions muscle fibres must not be sacrificed needlessly, and the motor nerves must be saved. The fascia is the strongest structure in the abdominal wall and it is very essential to close it properly. It is frequently under tension and unites more slowly than muscle tissue; for this reason it is necessary to overlap each layer separately. When closure under tension is unavoidable, the patient's shoulders should be kept in a semi-reclining position and the knees elevated on pillows (the "jack-knife" position) for a week after operation. Tension or stay-sutures are valuable to prevent strain on the fascia stitches. A gain in weight after operation, especially in obese subjects, should be avoided because it increases intraabdominal tension and weakens the abdominal wall. The use of an elastic belt checks the tendency to rapid accumulation of fat.—Leigh F. Watson: *Northwest Medicine*, April, 1924.



SURGICAL PATHOLOGY. By William Boyd, M. D., M. R. C. P., Ed., F. R. S. C., Professor of Pathology, University of Manitoba; Pathologist to the Winnipeg General Hospital, Winnipeg, Canada. Philadelphia and London: W. B. Saunders Company, 1925. Cloth, \$10.00 net.

This is a most extraordinarily interesting work which will be appreciated by everybody. It has a forward by Professor Wm. J. Mayo who writes, "What is needed today in the literature of surgical pathology is a work that will serve as a handbook to the surgeon and internist and a guide to the beginner in the field of medicine."

In our opinion, Dr. Boyd has served all these requirements in a most admirable manner, and no one can help but profit greatly by a careful study of this volume. The fact that the clinical features of most of these conditions have been summarized so that the relation of the pathology to the symptomatology could be demonstrated needs no apology, but in our judgment adds very much to the practical value of the work. In short, this is an admirable work, one which will be thoroughly appreciated both by the physician and the surgeon and one which can be most cordially recommended.

AN AFRICAN HOLIDAY. By Richard L. Sutton, M. D., LL. D., Fellow of the Royal Geographical Society of Great Britain. C. V. Mosby Co., St. Louis. Price, \$2.50.

Physicians, as a rule, do not write much outside of medicine, and if they do it is usually a book which one can recommend for insomnia. We except, of course, the travel books written by the great Nicholas Senn. "The Trip to Panama" by Byford, the interesting novels by S. Weir Mitchell and Charles B. Reed and others.

In the book before us, written by Richard L. Sutton, the author of Sutton's "Dermatology," on "An African Holiday," we certainly have a book which should interest every reader, giving as it does a description of his experiences in hunting for big and small game in Africa. No one should omit getting a copy of this extremely novel and charming book.

A TEXT-BOOK OF PHYSIOLOGY: FOR MEDICAL STUDENTS AND PHYSICIANS. By William H. Howell, Ph. D., M. D., Professor of Physiology in the School of Hygiene and Public Health, Johns Hopkins University, Baltimore. Ninth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, \$6.50.

Howell's "Physiology," without doubt, stands at the very top of all modern works on physiology. And as this is the ninth edition, there is very little we can add to its praise. It is needless to say the book has been

thoroughly revised and brought up to date in every way. A good many minor alterations have been made, especially in the chapter on internal secretions, which has been practically rewritten, also the chapter dealing with muscle contraction.

Nothing can be said in criticism of the book which is as nearly perfect as a book on physiology can be, and it will continue as usual to be the standard text-book on this subject.

THE EFFECTS OF INANITION AND MALNUTRITION UPON GROWTH AND STRUCTURE. By C. M. Jackson, M. S., M. D., LL. D., Professor and Director of the Department of Anatomy, University of Minnesota. P. Blakiston's Son & Co., Philadelphia, Pa. Price, \$8.00.

A most interesting and thoroughly scientific book which shows a profound study and deserves unqualified recommendation in every possible way. Few writers and authors have studied the subject as thoroughly as Professor Jackson has, and he has omitted nothing. The bibliography alone occupies nearly one hundred pages, which will give some idea of the extraordinary amount of research work put in this book.

It treats of the effect of inanition on plants invertebrates and vertebrates in the most exhaustive manner possible. We recommend it to all interested on this subject.

INFECTION, IMMUNITY AND INFLAMMATION. A study of the phenomena of hypersensitiveness and tolerance, and their relationship to the clinical study, prophylaxis, and treatment of disease. By Fraser B. Gurd, B. A., M. D., C. M., F. A. C. S., Montreal, Lecturer in Applied Immunology and in Surgery, McGill University; Associate Surgeon, Montreal General Hospital; Consultant in Surgery and Surgeon in Charge, St. Anne's Hospital, Department of Soldier's Civil Re-establishment. C. V. Mosby Co. Price, \$5.00.

This is a very satisfactory book for students as well as for general practitioners. It was written by a thorough student of the subject and is absolutely reliable throughout and a book which will take a prominent place among text books dealing with the subject in question.

OPERATIVE SURGERY. By J. Shelton Horsley, M. D., F. A. C. S., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va. Second edition. C. V. Mosby Co., St. Louis, Mo. Price, \$12.50.

Horsley's "Operative Surgery" is one of the best one volume books on surgery with which we are acquainted, altogether reliable, concise, authoritative, and satisfying in every sense of the word. The 666 illustrations contained therein are all original and add greatly to the value of the book.

This is the second edition, thoroughly revised wherever necessary.



New Dean for N. W. University Medical School.—Dr. Irving Samuel Cutter, Dean of the College of Medicine of Nebraska, has been appointed Dean of the Medical School of Northwestern to succeed Dr. Arthur I. Kendall, who resigned at the close of the last school year to accept an appointment as Professor of Bacteriology and Public Health at Washington University Medical School. Dean Cutter will assume his new duties at the close of the school year in June after ten years of service at the University of Nebraska.

The Van Nuys Hotel.—"Old fashioned hospitality still exists in one of the Los Angeles Hotels," writes a member of the Tri State Society from that city. She refers to the Van Nuys Hotel at Fourth and Main Streets, Los Angeles, managed by the Boggs Hotel Company. It is in the heart of the business section, convenient to stations and interurban lines, has an excellent restaurant well patronized by resident business men, and the president and manager, Mr. Ross N. Boggs, understands the almost forgotten art these days of making the guest welcome. Ladies traveling alone cannot do better than make their reservations at the Van Nuys.

The American Board of Otolaryngology.—The American Board of Otolaryngology will hold its first examination during the meeting of American Medical Association in Atlantic City, May 25th to 28th.

According to the rules of the Board, applicants are divided into three classes.

Class I. Those who have practiced Otolaryngology ten years or more.

Class II. Those who have practiced Otolaryngology five years and less than ten years.

Class III. Those who have practiced Otolaryngology less than five years. The type of examination is different for each class.

The Secretary, Dr. H. W. Loeb, announces that thus far over three hundred applications have been made.

World's Needs for Opium and Other Drugs Tabulated.—A report made at the second opium conference at the League of Nations shows the amounts of opium and its equivalents used in the principal nations of the world.

Twenty-five nations, representing a total population of approximately 745,000,000, have submitted reports on this subject to the League and they may be summarized briefly as follows:

The total estimated requirements are 551,548 kilos. The estimated average requirement per capita varies from 1.2 grams in Switzerland to .03 grams in Haiti. The average requirement per capita for all nations is a little more than .4 grams per year.

India's requirements are the greatest of all the nations, totaling 364,800 kilos, while the United States is second with a total requirement of 61,818 kilos. The requirements per capita in India, however, are 1.14 grams compared with 1.56 grams in the United States.

Switzerland's per capita requirements, averaging 1.2 grams, are the greatest, those of India second, and those of Poland third, with a requirement per capita of 1.89 grams per year.

The purpose of the work of the opium conference of the League of Nations is to control by mutual agreement and international cooperation the production, manufacture and distribution of opium, morphine and other drugs of a similar nature.

Coughs and Colds

that tend to linger and fail to respond to remedies usually employed, almost always owe their persistence to inability of the body to restore a physiologic balance. Restorative and reconstructive treatment is essential and the ideal remedy is

Gray's Glycerine Tonic Comp.

(Formula Dr. John P. Gray)

A third of a century's successful use of this widely employed reconstructive has shown countless medical men that Winter coughs and colds will not linger, if they use Gray's Glycerine Tonic Comp. from the beginning.

Used in doses of two to four teaspoonfuls three or four times a day, this dependable tonic not only increases the vitality and resistive powers of the whole body, but through its pronounced influence on the pulmonary circulation promotes the physiologic activity of the local tissues and enables them to overcome congestion and inflammation.

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"Journeys Beautiful," is not only filled with interesting fascinating articles; it carries regularly articles of real help and places to go, how to get there and when to go. It covers the famous resorts of the world; tells what you want to know about them. It covers every method of travel—Railway, Airplane, Motor, Steamship—in an interesting manner.

Every woman will like its fashion articles—what to wear on the trip and after you get there, written and illustrated by style authorities.

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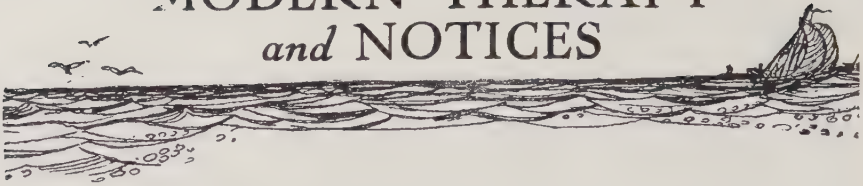
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MODERN THERAPY *and* NOTICES



DELIRIUM TREMENS—For controlling the active mania of acute alcoholism Peacock's Bromides in doses of one to two tablespoonfuls, every hour or two, has no superior. The sedative effect is marked, while the physician has the great satisfaction of knowing that he is not endangering his patient as he is so liable to with the more depressant hypnotics of synthetic origin. Gastric irritation is likewise avoided as well as tendencies to "bromism."

DEVOID OF UNDESIRABLE QUALITIES

A preparation of iron that is acceptable to the palate, free from the manifest disadvantages of irritation of the stomach, astringency and corrosive action upon the teeth, is an eminently eligible product. Gude's Pepto-Mangan is positively devoid of these undesirable qualities and attributes. The above is especially true of Gude's Pepto-Mangan in tablet form, which is readily portable, clearly and convenient for teachers, travelers, business men and women, and ambulant patients generally. Each two tablets is equivalent in medicinal activity to one tablespoonful of the liquid preparation. Samples and literature are obtainable from the manufacturers, M. J. Breitenbach Company, New York.

WELL WORTH THE EFFORT AND CARE

In using or prescribing Gray's Glycerine Tonic Comp., the practitioner will promote his patients' best interests and insure the results he seeks from this dependable restorative, by invariably specifying

R GRAY'S GLYCERINE TONIC COMP.

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One Bottle.

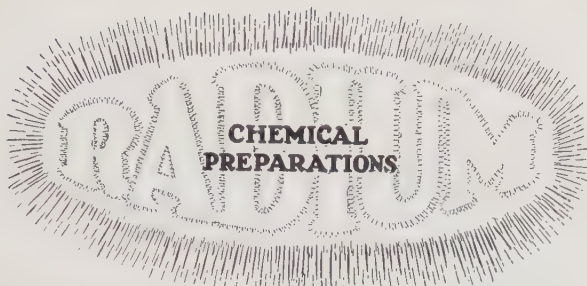
The use of "the original Gray's" means prompt, positive results and grateful, well satisfied patients, while the use of an imitation or substitute means failure—with all its dangers and disagreeable consequences.

The care and thought the physician puts into making sure his patients get "the original Gray's" invariably pays gratifying dividends.

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Prior to 1837, the iodines for the use of the medical profession were alkaline in reaction. In that year an acid iodine was brought out, which has not proven as successful as is needed for general purposes.

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Formula of Dr. Iwan Bloch

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They contain SEXUAL HORMONES, i. e., the hormones of the reproductive glands and of the glands of internal secretion.

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Sexual infantilism and eunuchoidism in the male. Impotence and sexual weakness. Climacterium virile. Neurasthenia, hypochondria.

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Furnished in TABLETS for internal use, and in AMPOULES for intragluteal injection.

Prices: Tablets, 40 in a box, \$1.75
100 in a box, 3.50

Testogan Ampoules, 12 in a box, \$2.50
Thelygan Ampoules, boxes of 12, 2.50

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soluble but is free from potash, neutral in reaction, and does not contain any of the irritants as alcohol, carbon-disulphide, chloroform, ether, petrolatum, phenol or water. Glydine-Bleil is indicated in all the infections and acute conditions. The formula is—resublimed iodine, which is germicidal, with sufficient strontium to make it anti-putrescent or stop putrefactive changes, and when these two drugs are properly manipulated so that they are rendered water-soluble in any per cent, they are then combined with C. P. Water-White Glycerine, which by its osmotic action will convey the medicament it contains through the integument or the mucosa to the tissues beneath, and on meeting the moisture of those tissues, oxidation takes place and germ life is destroyed. Then, too, the hygroscopic action of the glycerine reduces swellings by changing inflammations. Pain is at once relieved without any narcosis, so that Glydine-Bleil, doctor, will help you in any of the congestions, as in earache, or abscesses of any kind, as in the hepitzed lung tissues, where it liquifies that hepitzation. It also liquifies the fibrinous adhesions in fibrinous pneumonia, so that you need not have any fear of such adhesions appearing in any case where you use Glydine-Bleil.

A few drops in hot or cold water every 2 to 4 hours will relieve Measle cough in a few doses.

DERMATITIS CAUSED BY CHEAP FUR

The great demand for cheap furs has led to the development of all kinds of substitutes made by complicated dyeing of many cheap hides. Dermatitis resulting from wearing these imitation products has caused many complaints. Investigations of this problem by White (Jour. State Med., January, 1924, xxxii, 1 p. 16) show that quinone is the main trouble-maker. This substance is formed when paraphenylamin-diamin and closely related substances are used in dyeing. Quinone may be formed if the temperature of the dyeing vat becomes too low and affects the workers; it remains as a dry powder on furs not sufficiently washed and produces a dermatitis on girls that sew the fur on coat collars as well as those wearing the garments. White and his assistants produced the dermatitis by binding pieces of fur on their own skins.

Moistening of the fur was necessary to produce the dermatitis, indicating that perspiration plays a part in this condition.—(*The Nation's Health*.)

BISMUTH THERAPY IN CONGENITAL SYPHILIS

M. CAJAL AND H. SPIERER

(Presse Médicale, April 18, 1923, p. 354.)

The authors administered the drug intramuscularly, directly to the infant. In some cases they also utilized the indirect method of giving the drug to the mother. The compound used was "Trepol II," an oil suspension of sodium-and-potassium tartro-bismuthate.

After treating eight cases, the authors conclude that bismuth has an



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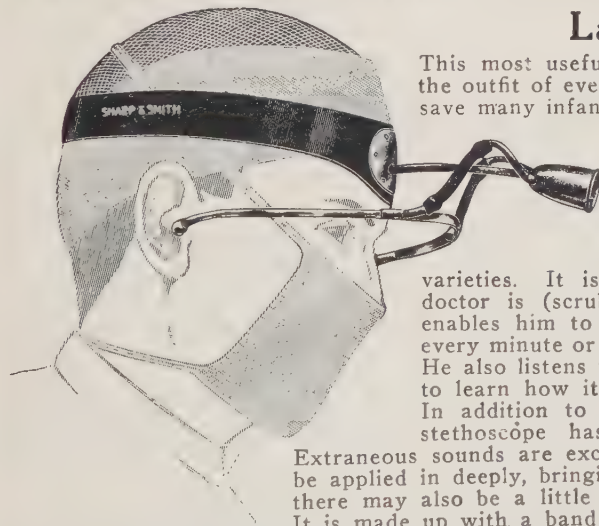
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FRENCH LICK SPRINGS HOTEL COMPANY, French Lick, Indiana

The De Lee-Hillis Head Stethoscope Latest Model

This most useful instrument should be part of the outfit of every obstetric practitioner. It will save many infants' and mothers' lives.



It was designed especially for use during the second stage of labor of both (spontaneous and operative), but it is even more useful for all the purposes of a stethoscope than the usual varieties. It is worn on the head after the doctor is (scrubbed up) for the delivery and enables him to listen to the fetal heart tones every minute or two without infecting his hands. He also listens to the mother's heart frequently to learn how it is bearing the strain of labor. In addition to this great advantage the head stethoscope has valuable acoustic properties.

Extraneous sounds are excluded; by pressure the bell can be applied in deeply, bringing it closer to the fetal heart—there may also be a little audition from bone conduction. It is made up with a band over the top of the head, with

a circular fibre head band and, for easy portability, with a ribbon woven strap.

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undoubted effect in congenital syphilis, its results being superior to those of mercury and not inferior to those of neoarsphenamine. Its administration is painless, a fact of extreme importance in the treatment of children. Nor did the authors observe any vomiting, diarrhea or febrile reaction. In one case of hydrocephalus they observed an improvement, which would be impossible with neoarsphenamine: the cephalic liquid diminished with a rapidity, which is unique in the history of antisyphilitic therapy.

The authors summarize as follows:

Trepol can be employed very conveniently in the treatment of children with congenital syphilis. It cicatrizes the lesions as rapidly as arsphenamine and more quickly than mercury. It has an immediate effect upon syphilitic coryza and is capable of rendering the Wassermann reaction negative. Its effect in nervous manifestations of congenital syphilis is indisputable, but like mercury and neoarsphenamine, it is unable to reduce the splenomegaly. The doses of trepol which can be employed are relatively higher in the treatment of children than in the case of adults. On an average the authors used 10 mg. per kilogram of body weight. Stomatitis and the gingival blue line are not to be feared in children whose dentition is not complete. The best treatment for nurslings is the mixed, when the drug is simultaneously administered to the child and mother. The duration of the treatment and the number of injections cannot yet be fixed. The authors conclude by saying that "one should not abandon the use of mercury or arsphenamine until the value of bismuth in congenital syphilis has been definitely proved."

TONGALINE FOR "COLDS"

A physician reports:

"I prescribed large quantities of Tongaline for many conditions for which it is particularly indicated, but I obtain especially gratifying results from its use for what are commonly called 'colds,' the symptoms of which are chills, fever, sneezing, coughing, etc., and for which the system requires, first of all, prompt and thorough elimination.

"I prescribe 4 ozs. Tongaline, directing that two teaspoonfuls be taken in a half glass of water, preferably hot, every two hours for three or four doses, or until the patient is thoroughly under the influence of the medicine; then one teaspoonful every three hours, until the attack has been aborted or the patient has recovered.

"I have personally derived great benefit from Tongaline for 'colds,' taking it on the first appearance of any of the symptoms and in nearly every instance abort the disease, and I use several bottles of Tongaline myself during the winter months in that way."

GOVERNOR GENERAL WOOD O. K.'s PHILIPPINE COCOANUT OIL

The Institute of Margarine Manufacturers has just received through the Bureau of Insular Affairs copy of a cable from Governor General



For the child who says "No"

When you say "Eat Cereals"

THE children who won't eat cereals when served in the usual hearty form, change their minds when they are offered Quaker Puffed Wheat and Puffed Rice.

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Children who cry for candy are satisfied with Puffed Wheat or Puffed Rice toasted, then buttered and salted like popcorn. This is the way to keep them happy between meals without upsetting digestions.

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Quaker Puffed Grains are just the finest quality grains grown, steam exploded to eight times normal size. This process breaks up every food cell, making it so easily digested and assimilated that nutritive value is increased.

Two exclusive products which bear the Quaker trade-mark. As every physician and dietician knows, this stands for supreme quality.

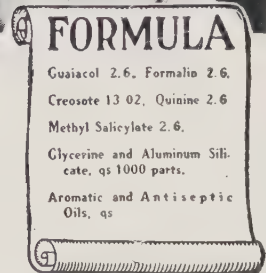
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The Emplastrum

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Will be found most efficacious for relieving the pain, halting the inflammation, and preventing a spread of the infection.

In a wide range of infective and inflammatory conditions **Pneumo-Phthysine** is being used daily by thousands of physicians who, because of the clinical results obtained, place reliance on this emplastrum.

The formula is the best indication to the physician of its range of usefulness. The best actual test of its value is that which is made in the doctor's own practice. We are anxious to have you make this test and will send you a clinical trial specimen free of charge on request.

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Gentlemen: Please send me, free of charge, a clinical trial specimen of Pneumo-Phthysine.

Dr.

Address

Leonard Wood certifying to the wholesomeness of Philippine cocoanut oil. During 1923 margarine manufacturers in the United States used 66,000,000 pounds of cocoanut oil, nearly all of which came from Philippine Islands.

According to information from the Bureau of Insular Affairs, General Wood, who is greatly interested in developing the industries of the islands and who is a physician as well as an administrator, has taken great pains to inspect the whole process of manufacturing cocoanut oil from the time the copra, or cocoanut meat, is extracted from the nut to the time when the oil pressed from the copra is shipped to the United States.

In his cable General Wood said:

"Oil mills operating in Manila have just been specially inspected by health service doctors and found in good sanitary condition.

"Copra is fresh cocoanut meat dried by sun or artificial heat in way to prevent contamination and to destroy any harmful germs should they accidentally gain access.

"Dried copra is handled only to remove any foreign matter like fragments of shell or husk.

"Cocoanut oil is produced from dried and ground copra by automatic machinery without touch of human hand. After entering apparatus process includes direct exposure to steam at above temperature of boiling water for about 45 minutes and the residue is again treated in the same way for about half an hour for second pressing to obtain remaining oil. Further refining also uses similar high temperature.

HERNIA FOLLOWING APPENDECTOMY

The usual causes of this hernia are postoperative suppuration in the abdominal wall; the use of drains that are larger than necessary; a faulty closure of the muscle and fascia layers; the division of nerves supplying the muscles; and the use of the wrong incision. The McBurney incision gives the lowest percentage of postoperative hernias.

An elliptical incision should be used if the sac is thin and adherent to the skin; if the sac is not adherent, a vertical incision saves time. Nothing is gained by opening the fundus—the adhesions here often make it difficult or impossible to reach the neck of sac—and time is saved by beginning the dissection at the neck and working inward. The author found that the simplest method of exposing the hernial opening is to invert the sac on one or two fingers, and feel the sharp fascial edge which is usually most distinct on the outer side of the hernia near Poupart's ligament. With the finger as a guide, the incision is made directly down to the fascia. The abdominal wall should be reconstructed as well as possible; and the muscles and fascia used as a single flap which is brought down and broadly overlapped by a second flap secured below from the external oblique aponeurosis.—Leigh F. Watson: *Chicago Medical Recorder*, March, 1924.



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QUICK QUAKER

WE have nothing to tell you about the food value of oats, for you know it as well as we do. Our message concerns the convenience of serving Quick Quaker—the new-style Quaker Oats which cooks in 3 to 5 minutes!

Think of it—this supreme energy, endurance and vitality food, now made the most convenient! There's a bowl of steaming, stimulating porridge ready for all before the coffee is done!

So when you prescribe "hot oats porridge," explain this new Quick Quaker. For many women will raise the objection that oats take too long to cook—that you're ordering an inconvenient breakfast.

Quick Quaker is a blessing to busy mothers, they'll thank you for telling them about it.

It means children starting to school and men going to work satisfied and fortified by the ideal food fuel. It helps women do their best for their families, while making their task less hard.

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Oats**

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The kind you have
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Cooks in 3 to 5
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During Pregnancy

an increase in the development of poisons within the expectant mother's body is inevitable. Therefore, interference with free elimination from the bowels always presents a special menace from the essential increase in the retention of toxins with all their possibilities for harm to both mother and offspring.

Fortunately, in *AGAROL COMP.* the practitioner has an ideal remedy, that not alone will afford prompt intestinal elimination, but used for a reasonable period, will soon restore the physiologic activity of the bowels, thus assuring normal evacuations that will follow regularly and thoroughly without the aid of further medication.

Entirely free from griping or pain, or any other objectionable effect, *AGAROL* can be used at any stage of pregnancy with every confidence in its safety and efficiency.

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Guess Where

There once was a miser named Bent,
Who never would cough up a cent.
When they wrote "Dues are due,"
He contracted the flu,
And, to get out of paying, he went.

At the Museum

Hard-of-Hearing Old Gentleman (to attendant): "And what does that skeleton represent?"

Attendant: "A dinosaur."

H.-of-H. O. G. (irascibly): "You dunno, sir. Well, what are you doing here, then?"

Circumstances Alter Cases

"When de Jedge he say t' me is I guilty," said Charcoal Eph, ruminatively, "I says if yo' all kin prove hit, Jedge, I is; but ef'n yo' all got any doubt about hit, not guilty, Jedge, not guilty!"—*Richmond Times-Dispatch*.

The World Improves

"Safety pins," a Cleveland (Ohio) doctor declares, "have killed more babies than firearms." Shooting babies does seem to have gone out of fashion.—*Springfield Union*.

Yeah, Yeah

Caller—And this is the new baby?

Fond Mother—Isn't he splendid?

Caller—Yes, indeed.

Mother—And so bright! See how intelligently he breathes.

An Investment

Mike—"This is a great country, Pat."

Pat—"And how's that?"

Mike—"Shure, th' paper sez yez can buy a foive dollar money order for three cints."—*San Francisco Examiner*.

Too Soon

Hall Boy—"De man in room seben has done hang hisself!"

Hotel Clerk—"Hanged himself? Did you cut him down?"

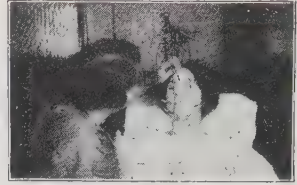
Hall Boy—"No, sah! He ain't dead yet!"—*Life*.

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Used with gratifying results in catarrhal jaundice, cholecystitis, auto-intoxication, gastro-intestinal disturbances, malarial infections and whenever cholagogue effect is desired without catharsis.

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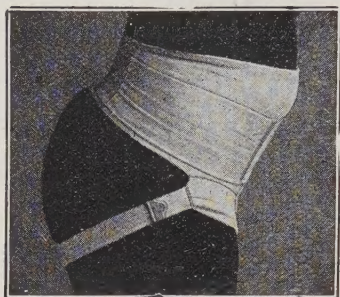
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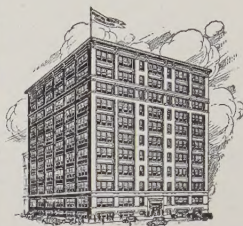
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